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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/802,580	03/16/2004	Paul F. Fewster	5926P010D	3478

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EXAMINER

HO, ALLEN C

ART UNIT PAPER NUMBER

2882

DATE MAILED: 04/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/802,580

Applicant(s)

FEWSTER ET AL.

Examiner

Allen C. Ho

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-4 are rejected under 35 U.S.C. 102(e) as being anticipated by Schuster *et al.* (U.S. Patent No. 6,226,349 B1).

With regard to claim 1, Schuster *et al.* disclosed an x-ray diffractometer, comprising: a sample stage (8) for mounting a sample (9), the sample stage being rotatable about an axis; a double pinhole collimator (14, 28) for directing x-ray radiation to a sample on the sample stage; a detector (29) for detecting x-rays diffracted by the sample; and an analyzer crystal (30, 35) arranged between the sample stage and the detector to direct x-rays diffracted by the sample onto the detector, wherein the analyzer crystal and detector are rotatable (12) as a unit about an axis that is coaxial with the axis of rotation of the sample stage (the analyzer crystal and the detector must rotate together to measure diffracted x-rays at other angles  $\theta/2\theta$ ).

With regard to claim 2, Schuster *et al.* disclosed an x-ray diffractometer according to claim 1, wherein the size of the pinhole of the double pinhole collimator nearest the sample stage is adjustable to provide an x-ray spot on the sample of variable size (column 8, lines 16-19).

With regard to claims 3 and 4, Schuster *et al.* disclosed an x-ray diffractometer according to claim 1, wherein a slit (31, 33) is arranged between the sample stage and the detector.

3. Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Wölfel *et al.* (U.S. Patent No. 4,364,122).

With regard to claim 1, Wölfel *et al.* disclosed an x-ray diffractometer, comprising: a sample stage (46) for mounting a sample (44), the sample stage being rotatable about an axis (48); a double pinhole collimator (58, 60) for directing x-ray radiation to a sample on the sample stage; a detector (52) for detecting x-rays diffracted by the sample; and an analyzer crystal (70) arranged between the sample stage and the detector to direct x-rays diffracted by the sample onto the detector, wherein the analyzer crystal and detector are rotatable as a unit about an axis that is coaxial with the axis of rotation of the sample stage (column 5, lines 34-52).

With regard to claim 2, Wölfel *et al.* disclosed an x-ray diffractometer according to claim 1, wherein the size of the pinhole of the double pinhole collimator nearest the sample stage is adjustable to provide an x-ray spot on the sample of variable size (column 5, lines 14-19).

With regard to claims 3 and 4, Wölfel *et al.* disclosed an x-ray diffractometer according to claim 1, wherein a slit (50) is arranged between the sample stage and the detector.

With regard to claim 5, Wölfel *et al.* disclosed an x-ray diffractometer according to claim 1, further comprising a drive (required when the diffractometer is automated) for rotating the sample stage and the detector and analyzer crystal with a ratio of rotation angles of substantially 1:2 ( $\theta:2\theta$ ).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schuster *et al.* (U. S. Patent No. 6,226,349 B1) as applied to claim 1 above, and further in view of Fujiwara (U. S. Patent No. 5,878,106).

With regard to claim 5, Schuster *et al.* disclosed an x-ray diffractometer according to claim 1, wherein the sample stage and the detector and analyzer crystal are rotated with a ratio of rotation angles of substantially 1:2 (Fig. 8).

However, Schuster *et al.* did not teach that the x-ray diffractometer further comprises a drive for rotating the sample stage and the detector and analyzer crystal.

Fujiwara disclosed an x-ray diffractometer that comprises a drive (10, 17) for rotating the sample stage (5) and the detector (13) with a ratio of rotation angles of substantially 1:2 (22).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to employ a drive for rotating the sample stage and the detector and analyzer crystal, since a person would be motivated to automate the process of data acquisition.

*Response to Arguments*

6. Applicant's terminal disclaimer filed 07 February 2005, with respect to claims 1, 2, and 5 have been fully considered and are persuasive. The rejection of claims 1, 2, and 5 under the judicially created doctrine of obviousness-type double patenting has been withdrawn.

7. Applicant's arguments filed 07 February 2005 have been fully considered but they are not persuasive.

The applicants argue that Schuster *et al.* failed to disclose a double pinhole collimator in a single embodiment. The examiner respectfully disagrees. The embodiment shown in Fig. 8 clearly shows a double pinhole collimator (14, 28) for directing x-ray radiation to a sample on the sample stage.

The applicants disagree with examiner's characterization of double slit collimators as a double pinhole collimator. The examiner would like to point out that the pending claims must be given their broadest reasonable interpretation consistent with the specification. It is proper to use the specification to interpret what the applicant meant by a word or a phrase recited in the claim. However, it is impermissible to import subject matter from the specification into the claims. MPEP § 2111. Here, a double pinhole collimator is simply construed as two x-ray limiting apertures/slits/passages/openings.

The applicants further argue that Wölfel *et al.* failed to disclose an analyzer crystal and a detector that are rotatable as a unit about an axis that is coaxial with the axis of rotation of the sample stage. The examiner respectfully disagrees. As disclosed by Wölfel *et al.*, the swivel mount (66) that supports the analyzer crystal (70) and the arm (54) that supports the detector (52) are aligned using a suitable guide means such as a dovetail mechanisms and adjusting screws

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(column 5, lines 49-52). Since the analyzer crystal is used to remove undesirable x-rays scattered from the sample, it must always be positioned in front of the detector. As the detector is rotated to acquire diffracted x-rays at other angles, the analyzer crystal must rotate synchronously with the detector.

### ***Conclusion***

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen C. Ho whose telephone number is (571) 272-2491. The examiner can normally be reached on Monday - Friday from 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward J. Glick can be reached at (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Allen C. Ho  
Primary Examiner  
Art Unit 2882

23 April 2005